WHAT IS CLAIMED IS:

1. An objective lens for an optical disk, comprising a bi-aspherical single lens having a numerical aperture of 0.7 or more, wherein a center thickness of the lens is more than a focal distance.

2. The objective lens for the optical disk according to claim 1 wherein an image forming magnification in a design reference wavelength is 0 times.

3. The objective lens for the optical disk according to claim 1 wherein the design reference wavelength is shorter than 0.45 μm.

4. The objective lens for the optical disk according to claim 1 wherein the focal distance is shorter than 4.0 mm and longer than t represented by the following equation:

$$t = d/n + 0.9 \ (mm),$$

in which d denotes a thickness of the optical disk, and n denotes a refractive index of the optical disk.

5. An objective lens for an optical disk, comprising a single lens having at least one surface formed in an aspheric shape and having a numerical aperture of 0.7 to 0.8 and an operation distance of 0.2 mm or more, and satisfying the following condition:

$$0.85 < d_1/f < 1.5;$$
$$0 > d_1/R2 > -0.7; \ and$$
$$n > 1.6,$$

in which f denotes a focal distance of the lens, d_1 denotes a center thickness of the lens, R2 denotes a curvature radius in a vertex of the lens on an optical disk side, and n denotes a refractive index of the lens.

6. The objective lens for the optical disk according to claim 5 wherein the focal distance is 2.2 mm or less.

7. The objective lens for the optical disk according to claim 5 wherein a thickness of a transmission layer of the optical disk is 0.3 mm or less.

8. An objective lens for an optical disk, comprising a single lens having at least one surface formed in an aspheric shape and having a numerical aperture of 0.78 or more, and satisfying the following condition:

$d_1/f > 1.2$;
$0.65 < R1/f < 0.95$;
$|R1/R2| < 0.7$; and
$n > 1.65$,

in which f denotes a focal distance of the lens, d_1 denotes a center thickness of the lens, R1 denotes a curvature radius in a vertex of the lens on a light source side, R2 denotes a curvature radius in a vertex of the lens on an optical disk side, and n denotes a refractive index of the lens.

9. The objective lens for the optical disk according to claim 8 wherein the operation distance is 0.3 mm or more.

10. The objective lens for the optical disk according to claim 8 wherein a thickness of a transmission layer of the optical disk is 0.3 mm or less.